

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference 733759C:GVR	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/AU2004/001090	International filing date (day/month/year) 13 August 2004	Priority date (day/month/year) 15 August 2003
International Patent Classification (IPC) or national classification and IPC Int. Cl. ⁷ A61H 23/04		
Applicant O'BRIEN, Vincent William et al		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
- a. ☒ (sent to the applicant and to the International Bureau) a total of 15 sheets, as follows:
- ☐ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
- ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
- b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or table related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

- ☒ Box No. I Basis of the report
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand 15 June 2005	Date of completion of the report 11 November 2005
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer  MATTHEW FORWARD Telephone No. (02) 6283 2606

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/AU2004/001090

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This report is based on translations from the original language into the following language which is the language of a translation furnished for the purposes of:
 - ☐ international search (under Rules 12.3 and 23.1 (b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
 - ☐ the international application as originally filed/furnished
 - ☒ the description:
 - pages as originally filed/furnished
 - pages* 1 to 7 received by this Authority on 15 June 2005 with the letter of 15 June 2005
 - pages* received by this Authority on with the letter of
 - ☒ the claims:
 - pages as originally filed/furnished
 - pages* as amended (together with any statement) under Article 19
 - pages* 8, 9 received by this Authority on 13 October 2005 with the letter of 13 October 2005
 - pages* received by this Authority on with the letter of
 - ☒ the drawings:
 - pages as originally filed/furnished
 - pages* 1/6 to 6/6 received by this Authority on 15 June 2005 with the letter of 15 June 2005
 - pages* received by this Authority on with the letter of
 - ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
 - ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to the sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 - ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to the sequence listing (*specify*):

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/AU2004/001090

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims 1 to 7	YES
	Claims	NO
Inventive step (IS)	Claims 1 to 7	YES
	Claims	NO
Industrial applicability (IA)	Claims 1 to 7	YES
	Claims	NO

2. Citations and explanations (Rule 70.7)

The following documents identified in the International Search Report have been considered for the purposes of this report:

- D1 CA 2350045 A1
- D2 US 2002/0042583
- D3 WO 1999011215
- D4 WO 2000072797
- D5 US 20020115949 A1
- D6 EP 1249218 A2
- D7 US 3892229 A
- D8 US 4922893 A
- D9 WO 2004000183

The present application defines a device for preventing deep vein thrombosis in the form of sleeve that encapsulates the lower limb and includes a bladder divided into a sequence of inflatable chambers in fluid communication with each other. The chambers inflate sequentially from the lower or most distal chamber to the upper or most proximal chamber.

D1 discloses an electrical leg-massaging device which may be used to mechanically and passively stimulate blood circulation in legs and, thereby, help prevent Deep Vein Thrombosis. A pair of specially designed leggings are worn in conjunction with a power source attached to a belt. In post operative care the power source can be remotely located to power the leggings that will in turn massage the lower section of the legs at predetermined intervals.

D2 discloses an automatic portable ambulant system for applying pneumatic pressure to a body limb including a portable ambulant hand-held fluid source unit, a conduit for delivering fluid generally by the unit, and a sleeve coupled to the conduit and adapted to envelop a body limb. The sleeve contains one or more individually inflatable cells, each cell being subdivided into two or more longitudinally extending confluent compartments along the axis of the body limb. The compartments are inflated and deflated in a cycling sequence.

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: V

D3 discloses a device for applying pressure to a body limb having a sleeve containing individually inflatable cells each cell being subdivided into longitudinally extending confluent compartments that are inflated and deflated essentially simultaneously.

D4 discloses an entirely self-contained, patient-worn apparatus for deep vein thrombosis prophylaxis with inflatable/deflatable bladder (102) disposed against an extremity such as the upper calf (109), foot, or hand of patient. Within a cast, an inelastic member (106,108) is preferably used to fully enclose the bladder and body part, such that compressive forces are directed substantially entirely against the body part of the patient when the bladder (102) expands, thereby conserving the power and reducing the volume of pneumatic compression required to operate the device. Given this conservation of energy, the invention may be battery operated from a source immediately proximate to the bladder (which is power source worn attached to the belt) arrangement, enabling the entire device to be self-contained and, in fact worn by patient.

D5 discloses a system for providing prophylaxis against thrombosis and a plurality of inflatable compression sleeves; the vehicle has a pneumatic pressure source for supplying a predetermined flow of pneumatic fluid to a plurality of passenger positions; each of the inflatable compression sleeves has a plurality of inflatable chambers therein; the sleeves are constructed to be engaged to a connection port, thereby providing fluid communication between the pneumatic pressure source and the plurality of chambers. When a first bladder (18a) has been inflated to a predetermined pressure, pressure valve allows the inflation fluid to flow to the next bladder. A sequential inflation is achieved but the bladders are not constructed as one piece. D5 represents the most relevant document.

D6 discloses an apparatus (10) for preventing a venous thromboembolism of a living subject including an inflatable cuff (16) which is adapted to be wound around a body portion of the subject and applies a pressing pressure to the body portion and pressing-pressure applying and determining device.

D7 discloses apparatus with pressure control circuit for application of intermittent compression to legs to prevent blood clotting in vessels.

D8 discloses a method and apparatus for promoting flow of a body fluid within a human limb including multi-cell inflatable appliance with limb encircling portion (24) and transverse portion (26) which extends across the stump end of a limb, source of air pressure and flow regulator (48).

D9 discloses a flexible sleeve with a number discrete and independently inflatable balloons. The features of the presently claimed invention are not disclosed by this document.

None of the documents D1 to D8 are considered to disclose the claimed invention either individually or combinations obvious to one of ordinary skill in the art. Articles 33(2) to 33(4) of the PCT are satisfied, the claimed invention is novel and inventive in view of the cited documents.